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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,920	12/19/2001	Helmut Mangold	39509-176287	8866

26694 7590 05/23/2005

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EXAMINER	
NGUYEN, NGOC YEN M	
ART UNIT	**PAPER NUMBER**
1754	

DATE MAILED: 05/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/020,920	MANGOLD ET AL.	
	Examiner	Art Unit	
	Ngoc-Yen M. Nguyen	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 4, 6-7, 9, 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants are requested to point out support in the instant specification, by page and line numbers, for the limitation "having a concentration of more than 0.5%". It is noted on page 3, middle paragraph, a range of "greater than 0.5 *by wt. KCl*" is disclosed, however the range required in claim 4 does not limit to just "KCl" and "by weight".

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over CA 2,223, 377 in view of Vanell (6,423,638).

CA '377 discloses a process for preparing pyrogenically-prepared oxides of metals and/or non-metals , wherein an aerosol is fed to a flame such as is used for preparing pyrogenic oxides by flame hydrolysis, the aerosol being homogeneously mixed with the gas mixture for flame oxidation or flame hydrolysis prior to reaction, the aerosol/gas mixture is allowed to react in the flame and the resulting doped pyrogenically-prepared oxides are separated from the gas stream (note claim 3). The aerosol is produced by nebulization using a two-fluid nozzle (note claim 5). CA '377 further discloses that the doping component is from 0.00001 to 20 wt%, preferably from 1-10,000 ppm (note claim 2) and the doped oxides have a BET surface area between 5-600 m^2/g (note claim 1). The doped metal oxides can be potassium-doped silica (note Example 5).

From Figure 1, air is fed with hydrogen and $SiCl_4$ and later as "secondary air", the air in these steps are considered as "adding oxygen" as required in the instant claim 11 since the instant claim does not require the oxygen to be pure oxygen.

CA '377 does not disclose specifically the breadth of the distribution of particle size, the pH or the absorption of dibutylphthalate of the oxide product.

In case the product of CA '377 does not inherently have the same breadth of distribution of particle size, the desire of monodispersed product is well known and conventional in the art. Thus, it would have been obvious to one skill in the art to

subject the product of CA '377 to a screening process in order to obtain a monodisperse product.

CA '377 teaches that the product can be used as fillers, as polishing materials for polishing metal or silicon wafers in the electrical industry, etc. (note page 4, lines 11-21).

Vanell '638 is applied to teach that ideally, a polishing slurry comprises abrasive particles having a size distribution in a narrow range, i.e., the abrasive particles are of uniform size (note column 2, lines 47-50). When the polishing slurry has a wide distribution of particle sizes, the filter is used to filter out particles above a predetermined size (note paragraph bridging columns 2-3).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to either optimize the process condition of the process of CA '377 to produce a product with narrow particle size distribution or to use a filter to remove particles outside of the predetermined size, as suggested by Vanell '638 because the product of CA '377 is suitable for being use as polishing materials and such polishing materials are desired to have uniform particle size as disclosed in Vanell '638.

Applicant's arguments filed February 2, 2005 have been fully considered but they are not persuasive.

Applicants argue that it is not clear why the mere filtration of the products of CA '377 using the Vanell methodology would result in the claimed product.

As stated in the above rejection, the process for producing the doped silica as disclosed in CA '377 is very similar to the claimed process. Even though CA '377 does

not disclose the breadth of distribution of particle size, but CA '377 does disclose that the oxide products of CA '377 can be used as polishing materials for silicon wafers among other uses (note CA '377, page 4, lines 11-21). Thus, when the oxide product of CA '377 is produced for such use, it would have been obvious to one skilled in the art to optimize the process conditions in CA '377 to obtain a product with narrow particle size distribution because Vanell '638 teaches that such requirement is crucial for polishing slurry in semiconductor application. In the event that such optimization is not possible, it would still have been obvious to one skilled in the art to subject the product of CA '377 to a screening process to obtain a product with narrow particle size distribution.

Applicants argue that Vanell is concerned with colloidal silica, and the product of CA '377 is pyrogenic silica.

Regardless of what type of silica is used in Vanell '638, Vanell '638 still teaches that abrasive particles, i.e. silica, used as polishing material in semiconductor purposes should have narrow particle size distribution and CA '377 clearly teaches that the product of CA '377 can be used for such purpose.

Applicants argue that Applicants' claim 4 specifies a concentration threshold not taught by the primary reference.

It should be noted that in CA '377, it is disclosed that the doping component can be from 0.00001 to 20 wt% (note claim 1), thus, it would have been obvious to one of ordinary skill in the art to optimize the concentration of the solution of doping component in the process of CA '377 to obtain the desired concentration of doping component in the final product. It should be noted that even the concentration of KCl in Example 5

was only 0.5% to obtain silica containing 300 μm/g K, but the concentration of other doping solution such as $CeCl_3$ was 5% to obtain silica containing 1860 or 2350 μm/g Ce (in Examples 2, 4, respectively). Thus, when silica with higher doping amount of K is needed, it would have been obvious to one skilled in the art to use a higher concentration solution of KCl in the process of CA '377.

Applicant's submission of the requirements for the joint research agreement prior art exclusion under 35 U.S.C. 103(c) on February 2, 2005 prompted the new ground(s) of rejection under 37 CFR 1.109(b) presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.02(l)(3). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Stan Silverman can be reached on (571) 272-1358. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed (571) 272-1700.

Ngoc-Yen Nguyen

Ngoc-Yen M. Nguyen
Primary Examiner
Art Unit 1754

nmn
May 16, 2005